M.S.

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/644,667	08/24/2000	Luis Felipe Cabrera	MSFT-0160/142385.1	5398

7590   11/06/2002

Thomas E Watson
Woodcock Washburn Kurth MacKiewicz & Norris LLP
46th Floor
One Liberty Place
Philadelphia, PA   19103

EXAMINER
SCHRANTZ, STEPHEN D

ART UNIT	PAPER NUMBER
2177	

DATE MAILED: 11/06/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 07-01)

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE _3_ MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed
  after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any
  earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on _27 October 2000_ .

2a)☐ This action is **FINAL**.   2b)☒ .This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is
closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) _1-45_ is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) _1-45_ is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage
application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)	4)☐ Interview Summary (PTO-413) Paper No(s). _____ .
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)	5)☐ Notice of Informal Patent Application (PTO-152)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _2_ .	6)☐ Other: .

DETAILED ACTION

Claim Rejections - 35 USC § 102

1.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that

form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act

of 1999 (AIPA) do not apply to the examination of this application as the application

being examined was not (1) filed on or after November 29, 2000, or (2) voluntarily

published under 35 U.S.C. 122(b). Therefore, this application is examined under 35

U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

2.   Claims 1-8, 12-13, 16, 21-22, 27-35, and 39 are rejected under 35 U.S.C. 102(e)

as being anticipated by Ofek et al. (U.S. Patent 6,385,706).

Ofek anticipates independent claim 1 by the following:

"identifying at least one portion of the stream of data for migration to the second storage

location" at col. 6 lines 36-41;

"moving said at least one portion to said second storage location" at col. 2 lines 44-48;

"preserving said stream's data relationships" at col. 2 lines 50-56.

Ofek anticipates dependent claim 2 by the following:

"first storage location and said second storage location are located on different volumes"

at Fig. 2A.

Ofek teaches dependent claim 3 by the following:

"identifying of said at least one portion for migration includes identifying said at least one portion according to pre-set criteria" at col. 29 lines 10-14.

Ofek teaches dependent claim 4 by the following:

"identifying of said at least one portion for migration includes specifying the size of an archive unit" at col. 30 lines 14-25.

Ofek teaches dependent claim 5 by the following:

"identifying of said at least one portion for migration includes specifying the size of a region of updates" at col. 31 lines 33-54.

Ofek teaches dependent claim 6 by the following:

"identifying of said at least one portion for migration includes specifying a memory allocation limit for the stream of data applicable to said first storage location" at col. 36 line 30.

Ofek teaches dependent claim 7 by the following:

"moving of said at least one portion is performed without exceeding said memory allocation limit" at col. 36 lines 30-38.

Ofek teaches dependent claim 8 by the following:

"the stream of data has at least one identifiable region of updates" at col. 29 lines 33-36.

Ofek teaches dependent claims 12 and 39 by the following:

"said second [target] storage location is a sequential access medium (SAM)" at col. 34 lines 47-56.

Ofek teaches dependent claim 13 by the following:

"said first storage location is a local location and said second storage location is a remote location" at Fig. 5.

Ofek teaches dependent claim 16 by the following:

"said preserving the data relationships of said stream includes generating metadata for description of said relationships" at col. 9 lines 49-53.

Ofek teaches dependent claim 21 by the following:

"A computer-readable medium having computer-executable instructions for instructing a computer to perform the method recited in claim 1" at col. 37 lines 53-58.

Ofek teaches independent 22 by the following:

"an identifier identifying the stream of data for which at least one portion is migrated" at col. 21 lines 51-59;

"data representative of the storage service used in connection with the migration of said at least one portion" at col. 21 lines 59-67;

"data representative of the memory mappings of said at least one migrated portion" at Fig. 13 and col. 21 lines 47-50.

Ofek teaches dependent claim 27 by the following:

"A modulated data signal for carrying information that encodes a data structure as recited in claim 22" at col. 34 lines 10-42.

Ofek teaches dependent claim 28 by the following:

"An application programming interface (API) for use in a computer system, whereby a stream of data may register for administration for partial migration techniques according to the method of claim 1" at col. 18 lines 17-29.

Ofek teaches dependent claim 29 by the following:

"An API according to claim 28, whereby said interface provides a common way to generate and store metadata in connection with the partial migration of streams of data to secondary storage" at col. 18 lines 18-21, col. 20 lines 47-51, and col. 22 lines 15-33.

Ofek teaches dependent claim 30 by the following:

"a hierarchical storage management (HSM) system for administering a stream of data for partial migration" at col. 14 lines 60-63;

"a source storage location having a stream of data stored thereon being serviced by said HSM system" at col. 14 lines 60-61 and col. 14 line 65 to col. 15 line 2.

"wherein said HSM system identifies and migrates at least one portion of said stream of data to a target storage location according to pre-set criteria and generates metadata for the description of data relationships of said at least one migrated portion" at col. 22 lines 57-63 and col. 29 lines 10-14.

Ofek teaches dependent claim 31 by the following:

"wherein the HSM system specifies the size of an archive unit" at col. 30 lines 14-25.

Ofek teaches dependent claim 32 by the following:

"wherein the HSM system specifies the size of a region of updates" at col. 31 lines 33-54.

Ofek teaches dependent claim 33 by the following:

"wherein the HSM system specifies a memory allocation limit for the stream of data applicable to said source storage location" at col. 36 line 30.

Ofek teaches dependent claim 34 by the following:

"wherein the HSM system moves at least one portion of the stream of data such that said memory allocation limit is not exceeded" at col. 36 lines 30-38.

Ofek teaches dependent claim 35 by the following:

"wherein the HSM system identifies a stream of data that has at least one identifiable

region of updates" at col. 29 lines 33-36.

Claim Rejections - 35 USC § 103

3.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4.   Claims 9-11 and 36-38 are rejected under 35 U.S.C. 103(a) as being unpatentable

over Ofek et al. as applied to claims above, and further in view of Barve et al. ("A Simple

and Efficient Parallel Disk Mergesort").

Ofek teaches a form of migrating information from one source to another through

the use of streams at col. 34 lines 57-65 and col. 35 lines 6-7. Ofek does not teach any

form of identifying the type of data stream. Barve does identify these types of data

streams at pg. 234-235. It would be obvious to one ordinarily skilled in the art at the time

of the invention to identify these types of data streams. By identifying the streams, the

data can be stored in a more efficient manner. Because of the increase of processor

speeds, the bottleneck has now become disk access, or the time to read data from

memory. By organizing the data, it can be read faster thus allowing faster run times.

Barve teaches dependent claims 9 and 36 by the following:

"wherein said identifying of said at least one portion for migration includes identifying a

type of stream of data" at pg. 235.

Barve teaches dependent claims 10 and 37 by the following:

"said type of stream of data is an append-only file" at pg. 235.

Barve teaches dependent claims 11 and 38 by the following:

"said type of stream of data is a first storage block write only file" at pg. 235.

5.   Claims 14 and 41 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ofek et al. as applied to claims above, and further in view of Boebert et al. (U.S. Patent 5,864,863).

Ofek teaches a hierarchical storage management stored across several nodes. He does not teach that the data is stored from a nonsecure site to a secure site. Boebert teaches this type of security in Fig. 12. It would be obvious to one ordinarily skilled in the art at the time of the invention to use this type of security. The information that is stored is valuable to its users. Enforcing security does not allow those access to hackers or others who may cause harm when given access to the data. Adding security ensures that only those who have privileges will be able to access the data.

6.   Claims 15 and 40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ofek et al. as applied to claims above, and further in view of Sawada (U.S. Patent 5,784,646).

Ofek teaches a hierarchical storage management stored across several storage nodes. He does not teach that the data streams move from an on-line location to an off-line location. Sawada teaches this type of storage in Fig. 7. It would be obvious to one ordinarily skilled in the art at the time of the invention to move data from online storage

to offline storage. By moving data to offline storage, more online storage is made available, thus freeing online resources.

7.   Claims 17, 24, and 42 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ofek et al. as applied to claims above, and further in view of Usdin et al. ("XML: Not a Silver Bullet, But a Great Pipe Wrench").

Ofek teaches that metadata stores the relationships of data in his hierarchical storage system. He does not teach that the metadata is formatted through World Wide Web components. Usdin teaches this feature on pg. 125. Usdin also teaches that XML can be used to process metadata at pg. 129. It would be obvious to one ordinarily skilled in the art at the time of the invention to use World Wide Web components to with the metadata. By using a World Wide Web component, the metadata can provide interoperability between applications that exchange machine-understandable information on the Web.

8.   Claims 18, 25, and 43 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ofek et al. as applied to claims above, and further in view of Glebov et al. (U.S. Patent 6,343,265).

Ofek teaches a method of storing data to a map of storage locations found across a network at Fig. 5 and col. 6 lines 21-22. He does not teach that the metadata is formatted according to XML, DCOM, or Java. Glebov does teach the use of formatting data relations with XML at col. 4 lines 51-67. It would be obvious to one ordinarily skilled in the art at the time of the invention to use XML to access the metadata. XML is a common

format used to model metadata. It allows the metadata to be shared across several

different machines.

9.   Claims 19-20 and 44-45 are rejected under 35 U.S.C. 103(a) as being

unpatentable over Ofek et al. as applied to claims above, and further in view of Lam

(U.S. Patent 5,564,037).

Ofek teaches a method of storing data to a map of storage locations. Ofek teaches

that this method could be used in a hierarchical storage management at col. 14 lines 60-

63. He does not teach the data migration details that are a part of hierarchical storage

management. Lam does teach these details at col. 1 lines 44-66. It would be obvious to

one ordinarily skilled in the art at the time of the invention to use data migration. By

migrating data, which is infrequently used or accessed, space can be freed on the file

server. Data migration allows for a more efficient method of storing files. Those files

that are accessed frequently remain on faster accessed storage, while the less frequently

accessed files are moved to slower storage.

Lam teaches dependent claims19 and 44 by the following:

"the storage for said at least one portion in said first storage location is freed for use by

the system after said at least one portion is moved to said second storage location" at col.

1 lines 61-64.

Lam teaches dependent claims 20 and 45 by the following:

"said stream of data is a sparse file" at col. 3 lines 30-40.

10.   Claim 23 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ofek et al.

as applied to claims above, and further in view of Coy et al. (U.S. Patent 5,644,766).

Ofek teaches the storage of data across several storage nodes. He does not teach

that temporal data is stored. Coy does teach the use of temporal data at col. 4 lines 57-66.

It would be obvious to one ordinarily skilled in the art at the time of the invention to use a

timestamp corresponding with the time of data migration. By using a timestamp, the

hierarchical storage management system can determine the time the data was created or

modified. The timestamp can be used to determine if newer versions of the data exist.

11.   Claim 26 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ofek as

applied to claims above, and further in view of Salas et al. (U.S. Patent 6,233,600).

Ofek teaches that metadata stores the data relationships at col. 11 lines 58-60. He

does not teach that the metadata is stored in a jet database. Salas does teach the use of a

jet database to store the relationships between data at col. 4 lines 28-32 and col. 13 lines

3-6. It would be obvious to one ordinarily skilled in the art at the time of the invention to

use a jet database to store the data relationships. A jet database is a commonly used

database. By storing metadata in a jet database, the system can query this database to

obtain the needed information. The metadata can then be used to access to the data found

in storage.

Conclusion

12.   The prior art made of record in PTO-892 and not relied upon is considered
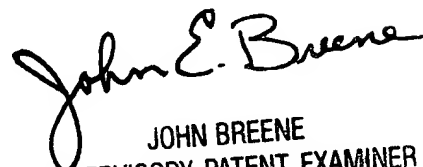
pertinent to applicant's disclosure.

13.　　Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Steve Schrantz whose telephone number is (703) 305-

7690.　The examiner can normally be reached on Mon-Fri. 8-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, John Breene can be reached on (703) 305-9790.　The fax phone numbers for

the organization where this application or proceeding is assigned are (703) 746-7239 for

regular communications and (703) 746-7238 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or

proceeding should be directed to the receptionist whose telephone number is (703) 305-

3900.

JOHN BREENE
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2100

SDS
October 10, 2002